

COMMONWEALTH OF MASSACHUSETTS

NORFOLK, SS.

SUPERIOR COURT DEPARTMENT
OF THE TRIAL COURT

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COMMONWEALTH OF MASSACHUSETTS,

v.

KAREN READ.

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* Docket No. 2282CR00117
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BEFORE THE HONORABLE BEVERLY CANNONE
MONDAY, JUNE 17, 2024
TESTIMONY OF IAN WHIFFIN

APPEARANCES:

For the Commonwealth:

BY: ADAM LALLY, A.D.A.
LAURA MCLAUGHLIN, A.D.A.

For the defendant:

BY: DAVID YANNETTI, ESQ.
ALAN JACKSON, ESQ.
ELIZABETH LITTLE, ESQ.

Dedham, Massachusetts
Room 25

Christine D. Blankenship, CVR
Court Reporter/Transcriber

**With Sidebar*

I N D E X

WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS
Ian Whiffin				
(By Mr. Lally)	3		83	
(By Mr. Yannetti)		76		84
Exhibits:				
614-626	Charts			

1 (Court in session.)

2 (Defendant is present with counsel.)

3 THE COURT: All right. You're next witness, please,
4 Mr. Lally.

5 MR. LALLY: Yes, Your Honor. The Commonwealth would
6 call Mr. Ian Whiffin the stand.

7 THE COURT: Okay. Mr. Lally, you just need to tell me
8 when I need to give that instruction.

9 MR. LALLY: Yes, Your Honor.

10 IAN WHIFFIN, affirmed

11 THE COURT: Whenever you're ready. Mr. Lally.

12 **DIRECT EXAMINATION**

13 **BY MR. LALLY:**

14 Q Good afternoon, sir.

15 A Good afternoon.

16 Q And if it's at all helpful, that microphone before you
17 is adjustable. You can put it in any direction you wish.
18 Just try to keep your voice up, okay, sir?

19 A Thank you.

20 Q Now, sir, could you please state your name and spell
21 your last name for the jury?

22 A Yes. It's Ian Whiffin. So I-A-N, W-H-I-F-F-I-N.

23 Q And what is it that you do for work, sir?

24 A I'm currently the coding product manager at Cellebrite.

25 Q And what is Cellebrite?

1 A Cellebrite is one of the world leaders in mobile
2 forensics software.

3 Q And when you say forensic software, can you explain to
4 the jury a little bit about sort of what is forensic
5 software and how it's used, specifically your Cellebrite?

6 A Yes. So forensic software is used to gain access to
7 people's devices, cell phones, primarily to extract that
8 data and to allow examiners to pass and decode that data to
9 make sense of it in a more user-friendly way so that a
10 report can be created for investigators.

11 Q Now, sir, if I could ask you just a few questions,
12 going back to some of your educational and prior work
13 experience. With regard starting sort of with your
14 undergraduate work, what, if any -- where did you go to
15 school and what, if any, degree did you receive?

16 A Okay. I didn't get a degree. I'm originally from the
17 UK, where I did qualifications in computing, the Higher
18 National Certificate in computing, and then joined the
19 police in 2004.

20 Q And what department was that, sir?

21 A That was response work. So South Yorkshire Police as a
22 response officer.

23 Q And where did you go from there?

24 A In 2009, I immigrated to Canada, where I was able to
25 continue policing with the Calgary Police Service, where I

1 spent approximately four, five years, again, working patrol
2 before moving to the digital forensics team of Calgary
3 Police.

4 Q And with respect to moving to that digital forensics
5 team, what if any specialized training did you receive in
6 regard to that area?

7 A So once I had made it into the digital forensics, I was
8 sent to Ottawa for three weeks to do a foundational
9 computer forensics course covering all manner of digital
10 forensics to begin with. Throughout my eight years with
11 Calgary Police, I did constant courses each year to keep
12 information updated, including a two-week course again at
13 the Canadian Police College in Ottawa, specifically about
14 cell phone forensics. And then also during that time,
15 additional courses for extracting data, for interpreting
16 Internet artifacts or any other kind of information found
17 on a phone or computer.

18 Q And following that, where did -- where did you go from
19 there, sir?

20 A In 2020, I left Calgary Police Service and began
21 working at Cellebrite as the senior digital intelligence
22 expert, where I would use my knowledge of the forensic
23 community to assist the developers with creating and
24 maintaining a program that examiners would want to use.

25 And finally, about two years ago, I moved to the

1 decoding product manager position.

2 Q Can you explain to the jury, sort of what it is, what
3 your role is, and what is it that you do for Cellebrite?

4 A Yep. So right now, in the position I'm in, again, I
5 use my knowledge of the digital forensics landscape in the
6 community. I talk with users about their daily challenges,
7 what applications are causing them problems, what they need
8 to get access to, what they need to understand, and I take
9 that information, create a priority list, and then
10 determine, with our developers, what we will tackle, how we
11 will tackle it, and how it will appear to the end user.

12 Q Now with regard to your education in this area, what if
13 any certifications do you have?

14 A No specific certifications. I've done the Cellebrite
15 coursework since joining Cellebrite, but other than the --
16 the two, sorry, the three-week course in Ottawa and then
17 again, the two-week course in Ottawa. I don't have the
18 SANS training, or any of that kind of training
19 certifications.

20 Q And in addition to your work with Cellebrite, what if
21 any other areas of the field have you -- have you worked?

22 A Sorry. Could you rephrase that?

23 Q Sure. Have you given any presentations? Have you
24 published any work in relation to this area?

25 A Yes. So since working as an examiner, I identified that

1 there were times that I needed to pass artifacts from
2 applications that the main vendors didn't support. In
3 response to that, I would do my own research. That research
4 turned into a selection of digital forensics tools, and I
5 created a website for myself to share that research, to
6 share those tools with the community.

7 And directly related to that, I have published articles
8 related to accessing data on phones, related to SQL
9 databases, related to various other artifacts, primarily
10 locations.

11 Q Over the course of your work, have you had occasion to
12 testify in other courts in relation to this specific field?

13 A Yes, related to digital forensics, I've testified
14 approximately 20 times mainly in Canada, but also once in
15 Michigan, once in Australia, once in the UK.

16 Q Now, as far as questions that come into -- come into
17 your company with relation to interpretation of data, other
18 sort of general forensic questions, what parts of the world
19 do these questions come in from, and how widely used is
20 your product?

21 A So the product is used globally. There are a slight
22 number of countries that we don't tech support to, but
23 generally, if a police service is interested in digital
24 forensics, then they're using at least some of our tools.

25 We operate a -- an email address which is open to any

1 user called "stump us", and the idea is that users, if they
2 come across an artifact that they can't explain, they can
3 email to myself and some of my colleagues, and we can
4 research that artifact, and we can try and give them an
5 answer as to say why the artifact is there and how it
6 should be interpreted.

7 Q You used the term in there as far as an artifact, if
8 you could please explain to the jury sort of what your
9 understanding of that term is and how it's used within your
10 specific image.

11 A Yeah, so I would refer to an artifact as essentially
12 any piece of data which I've recovered from the phone which
13 is of interest. It could be a web history visit. It could
14 be a text message. It could be a photograph, any piece of
15 information.

16 Q Now, sir, turning your attention to September of 2023.
17 At some point in that month, were you contacted by the
18 Norfolk District Attorney's Office and the state police in
19 regard to this case?

20 A Eventually, yes. Initially, I was contacted by a
21 member of Cellebrite.

22 Q And if you know, why was that initial as far as the
23 initial contact or initial request from Cellebrite, can you
24 speak about that?

25 A My understanding was there was an artifact found on a

1 device, and people were looking for an explanation as to
2 how this particular time stamp was relevant to the case.

3 Q Now, if you could explain to the jury, sort of what you
4 -- what were you provided and what were you asked to look
5 at?

6 A So the original question is just basically how can we
7 explain this 227 time stamp. I spoke to my colleague and
8 requested if he could contact the investigators and any
9 information that they could share about where this
10 particular time stamp was found so that I could investigate
11 it. I was advised at that time that the case had already
12 been uploaded to our own support network, so the full
13 extraction of the device in question was already in
14 Cellebrite's possession, and I was able to access it from
15 there and start to examine what the issue was that was
16 causing confusion.

17 Q Now, with reference to this issue, can you describe to
18 the jury just in general terms sort of what this issue was?

19 A Yeah. So the issue as I was led to believe, is there
20 was a time stamp for a web history artifact of 2:27 and 40
21 seconds a.m. local time, which would be UTC five, and it
22 didn't make sense to the investigators. And the question
23 was, is there any other interpretation for what this time
24 stamp could mean.

25 Q And so essentially, you were asked to explain the time

1 stamp and how it came to be, correct?

2 A Correct.

3 Q And as far as this particular issue, has this risen in
4 other instances? Have you been asked the same question or
5 similar questions in regard to this type of artifact?

6 A Yeah, several weeks later, so probably around December
7 time last year, I was contacted by a police investigator in
8 Austria with a very similar question, but related to
9 obviously a different Internet search. And about a week
10 later, the defense expert in the same case also contacted
11 me, asking the same question. The defense expert in that
12 case was able to provide the database, and I was able to
13 provide the answer.

14 Q Now, as far as the full extraction, is that the
15 entirety of what you looked at in this instance, or what,
16 if anything else, were you provided with in regard to your
17 view and your analysis in this case?

18 A So I did work with the full extraction, but my interest
19 was focused on just the web history artifacts.

20 Q And what, if anything, did you find with regard to the
21 web history artifacts?

22 A So the 2:27:40 time stamp was correct insofar as that
23 is the time that is shown within the database. It was
24 indeed a deleted record, but the interesting thing was why
25 the time stamp said 2:27:40. And I did some testing on

1 this and discovered the reason why 2:27:40 was actually
2 listed in the database, even though that's not the time, in
3 my opinion, that the search was conducted.

4 Q And what is your opinion as to when the search was
5 conducted?

6 A There's plenty of other evidence on that extraction
7 that shows what activity was occurring at 2:27:40, and
8 there's plenty of evidence later on in the day that shows
9 that that particular search was conducted at 6:23 I believe
10 51 seconds, and then at a similar search at 6:24 and 18
11 seconds, I believe.

12 Q And before we get to that --

13 MR. LALLY: Your Honor, may I approach?

14 THE COURT: Yes.

15 Q Mr. Whiffin, I'm showing you a document and ask you to
16 take a look at that and look up when you're done.

17 A Yes.

18 Q Do you recognize that, sir?

19 A I do, yes.

20 Q What do you recognize that to be?

21 A This was the Internet history, the history.db database
22 table, showing activity from the morning of the 29th of
23 January, 2022.

24 MR. LALLY: May I approach again, Your Honor?

25 THE COURT: Yes.

1 MR. LALLY: Commonwealth seeks to introduce this as the
2 next exhibit.

3 MR. YANETTI: No objection.

4 THE COURT: Okay.

5 (Whereupon Exhibit No. 614, Chart, was marked as an
6 exhibit.)

7 MR. LALLY: Your Honor, may I return to the witness?

8 THE COURT: Yes.

9 MR. LALLY: Your Honor, if I may, may the report be
10 published to the jury?

11 THE COURT: Yes.

12 MR. LALLY: Your Honor, may I approach just to
13 retrieve?

14 THE COURT: Yes.

15 Q Now, Mr. Whiffin, do you recognize what's up on screen
16 now as the exhibit you have before you?

17 A I do, yes.

18 Q And, Mr. Whiffin, there should be a laser point on the
19 desk next to you. What I'm going to ask you to do is if you
20 could using that laser point, explain to the jurors what
21 we're looking at in this exhibit and what, if anything, of
22 significance you observed within this exhibit.

23 A Okay, of course. So this was a table I created based on
24 the data from the phone. The first column shows the local
25 time of the record that was written to the history

1 database. This is a database which is tracking all web
2 pages which are loaded as you use them.

3 The second column starts with the URL, so the Uniform
4 Resource Locator, so what you would type in, or how the
5 browser knows which website you want to visit.

6 The title is part of the website which is loaded. One
7 of the top attributes of the website will load the title.

8 Visit count relates to an internal counter within
9 Safari, which just tracks how many times a particular
10 website is visited in order to make suggestions to you down
11 the road.

12 And then finally, the last column shows the source of
13 this information. So history.db is the name of the
14 database. History underscore visits is the name of the
15 table, and then the number is the unique identifier which
16 is assigned to that particular record in
17 consecutive order. So every time you add a new record, that
18 number will increase by one.

19 Q And, Mr. Whiffin, a couple of foundational questions
20 that I should have probably asked you first. My apologies.

21 With respect to the cell phone extraction that you were
22 provided, that was from an individual named Jennifer
23 McCabe; is that correct?

24 A That's my understanding, yes.

25 Q And it's fair to say you don't know Jennifer McCabe,

1 never met her, don't know anything about her?

2 A Correct.

3 Q And as far as an extraction is concerned, if you could
4 please explain to the jury sort of what your understanding
5 of that is, what is an extraction?

6 A An extraction in this case, all of the files and
7 folders have been extracted from the device, saved on a
8 computer in a zip file container. So essentially, in a way
9 that is as close to the original from the device as
10 possible.

11 Q And again, what is your title specifically with
12 Cellebrite?

13 A It's decoding product manager at the moment.

14 Q And so what if any relation does what you do have with
15 relation to an extraction, and how that's --- what's sort
16 of the relationship between what you do in a Cellebrite
17 extraction?

18 A So once the extractions been extracted, and we have the
19 zip file, then Physical Analyzer is the tool that
20 Cellebrite creates to allow examiners to look at that
21 extracted data in a meaningful way. And my role is somewhat
22 shaping how examiners will see that data when they open up
23 Physical Analyzer and look at the extracted data.

24 Q And how did your role play into that? What is it that
25 you do that -- what, if any, relationship does what you do

1 have to do with how examiners will view something from the
2 Cellebrite tool?

3 A Again, so after being an examiner for ten or eleven
4 years, I've got that kind of understanding of how examiners
5 work, being someone who also writes my own software and
6 does my own research, then I can kind of cross that void
7 that usually exists between developers and examiners and
8 help both parties try to come to a meaningful conclusion.

9 MR. LALLY: Ms. Gilman, if you could shrink that just a
10 little or zoom out a little.

11 Q Now, again, Mr. Whiffin, if you could using that
12 pointer direct the jurors' attention to what, if anything,
13 of significance you observed in this particular case?

14 A Yes, so the lower two records which are highlighted in
15 green, are two records which occurred at 2:27 and 42
16 seconds local time, so two seconds after the Google search
17 had allegedly been made. And then the second record is
18 five seconds after that at 2:27:47 seconds. Both those URLs
19 relate to a website of hockomocksports.com.

20 Q If you could explain to the jury, what is a contiguous
21 identifier?

22 A So every SQLite database will -- will assign a unique,
23 contiguous identifier number. So again, the very first
24 record created will be given a record ID of one, second
25 record will be two, and so on and so forth. Those numbers

1 are never reused. So if I was to delete record three, that
2 record number will never be reused, and I can see that
3 there's a gap and deleted data in that database.

4 Q Now, you used another term in there as far as a SQLite
5 database. If you could explain to the jury what your
6 understanding of that term is based on your training and
7 experience?

8 A Yeah, a SQLite database essentially, it's a series of
9 tables. It's a way for data to be stored, again, in a
10 meaningful, organized fashion that can be queried, can be
11 examined, can be filtered, searched, et cetera. It can be
12 useful for anybody who wants to get data from an organized
13 file.

14 Q Now, with reference to the searches that you observed
15 within this particular web history, what, if any,
16 relationship did the contiguous identifiers, sort of a
17 range, what, if anything, did that cover?

18 A I'm sorry. Can you rephrase that?

19 Q Sure. What if any observations did you make as far as
20 those contiguous identifiers in the range they had in
21 relation to the web history that you observed?

22 A Okay. So within the history.db file, there were no
23 missing numbers from the beginning of January, essentially
24 until early February. That told me as the examiner that no
25 records have been deleted during that time.

1 MR. LALLY: May I approach again, Your Honor?

2 THE COURT: Yes.

3 Q Do you recognize that, sir?

4 A I do, yes.

5 Q What do you recognize that to be?

6 A This is the browser state record which identified a
7 search at 2:27:40 a.m.

8 MR. LALLY: May I approach again, Your Honor?

9 THE COURT: Yes.

10 MR. LALLY: Commonwealth would seek to introduce this
11 as the next exhibit.

12 MR. YANETTI: We have no objection.

13 THE COURT: Okay.

14 (Whereupon Exhibit No. 615, Chart, was marked as an
15 exhibit.)

16 MR. LALLY: May I return to the witness, Your Honor?

17 THE COURT: Yes.

18 MR. LALLY: And with the Court's permission, may we
19 publish it to the jury?

20 THE COURT: Yes.

21 Q Now, sir, directing your attention to the screen, is
22 that what you have before you as the next exhibit?

23 A It is, yes.

24 Q And if you could explain to the jury while looking at
25 this exhibit what, if any, information you're able to sort

1 of glean as a forensic examiner.

2 A Okay. So this is a searched item exhibit. It's
3 technically a derivative of a different exhibit.
4 that we find on the device. So we found what we consider a
5 web history record. So a web history record would just mean
6 we have a URL that was visited and potentially a time stamp
7 and a title. Searched items looks at all of the web
8 history items that we found and tries to identify were
9 these actually searches that were conducted. So, for
10 example, if you were to do a search on Google, you'd see
11 that the website that you're taken to is Google.com, query,
12 then it contains the query string that you've typed in.

13 We extract that information, we extract that query, and
14 provide it to the user as a searched item. In this case, I
15 can see that it came from the browser state dot DB WAL
16 file. The search query itself was "Hos long to die in
17 cold," and it shows as a deleted record.

18 Q Now, with respect -- I think you've used a couple of
19 different terms within that as far as a knowledge C
20 database. Can you explain to the jury what that is?

21 A Don't recall saying the word C, but I can explain what
22 most C is in this case.

23 Q If you could.

24 A Yes, the knowledge C database is at the heart of iOS.
25 It stores lots of information about the activity on the

1 device at any given time, things like when the backlights
2 turned on, when the device is unlocked, what application is
3 in focus at the time, and how long it's in focus for. And
4 important to this case, which websites on screen at any
5 given time as well.

6 Q When you say when a website is in focus, can you
7 expound upon that as far as what exactly do you mean by
8 when you say in focus?

9 A So in terms of iOS itself, when it's in focus, it would
10 be the primary item that's visible on screen. So with iOS,
11 you can have applications in the background that you aren't
12 using, but the one that you are currently using is
13 considered in focus, taking up the entire screen.

14 Q I believe you had used the term as far as a browser a
15 state dB; is that correct?

16 A Correct.

17 Q And can you explain to the jury what you're
18 understanding that term is and how it relates to this?

19 A Browser state DB is just the name of the database, the
20 name that Apple gave it. It's gone through some changes
21 over the last few years. For example, in iOS 14, it did
22 store the state of the tabs that were open within a
23 browser. In iOS 15, there was a significant change, and the
24 only time that records were written to the database is when
25 the tab was closed. So a significant difference in that it

1 doesn't show you what's currently open, it only shows you
2 what's previously been closed.

3 Q Now, this search here, what, if anything, did you
4 observe as far as this record in relation to the history DB
5 related to the search?

6 A This record is not mentioned at all within the history
7 DB database.

8 Q And what if any missing records from this time frame
9 did you observe, either?

10 A There were no missing records in the history.db
11 database. Within this time frame, within the browser state
12 database, there were three deleted records.

13 Q And when you say deleted records, as far as your
14 Cellebrite's tool is concerned, what exactly does deleted
15 mean?

16 A These are records that have been deleted, not
17 necessarily by the user, potentially by the system, but
18 they are considered deleted records that we're able to
19 recover.

20 Q What are some of the ways that something might be
21 deleted by the system, and which -- are you talking about
22 the phone or are you talking about your tool?

23 A The phone, right. Our tool is designed as a forensic
24 tool. It's not going to edit, delete, or affect the data in
25 any way - just present what is in the extraction. But there

1 are multiple times on an iOS device or an Android device
2 where cleanup essentially happens, and we start to lose
3 data after a certain amount of time.

4 Q Now, with respect -- let me just ask it this for one
5 moment.

6 With respect to Cellebrite as far as the tools, have
7 there been a variety of different versions of those tools
8 as far as conducting that forensic extraction?

9 A Yes. So Cellebrite Physical Analyzer has been
10 available for approximately 12, 13 years in various
11 versions.

12 Q And what if any differences are there, I mean, in
13 general terms between, say, an old version versus a newer
14 version?

15 A Obviously, in the digital forensics landscape, whenever
16 a provider creates a new feature, we have to change our
17 code to adapt to what they've now introduced. There can be
18 research that's been done, so we now learn new things, and
19 we add support all the time. So something can be supported
20 in this new version of Physical Analyzer that may not have
21 been supported or even existed in a previous version.

22 Q Now, with respect to your work in this field, have
23 there -- what if any tools have you designed and or created
24 or something that to conduct this type of work?

25 A Aside from Physical Analyzer?

1 Q Yes.

2 A Okay. So I have my own tool called Artex, which I've
3 been working on for around five years, since -- since being
4 an examiner myself and struggling to pass any particular
5 application that I needed. So I started to write my own
6 tools, and that's the one that is -- one that I still
7 maintain on the side of my own time, partly for my own
8 knowledge, but partly because I think it still introduces
9 some fantastic features which aren't available in any other
10 tool for research purposes. So, yeah, I continue to write
11 this tool to this day.

12 THE COURT REPORTER: And can you just say the name of
13 the tool?

14 THE WITNESS: Artex. A-R-T-E-X.

15 THE COURT REPORTER: Thank you, sir.

16 Q Now with regard to the situation depicted in the
17 exhibit up on the screen, what are some of the reasons why
18 this may occur, or this why -- why this may read as it
19 does?

20 A Sorry. Is it deleted?

21 Q Yes.

22 A The record itself has been deleted. As I said, the
23 reason why it's deleted through my testing, I've only found
24 two ways that that kind of record can be deleted by the
25 user, and I don't believe either of those ways was actually

1 utilized on this device.

2 Q And what are those two ways?

3 A The user has the option to selectively delete history
4 items. So you can delete either one at a time or the
5 entire day's content, or the last two days' content, or you
6 can delete all content altogether. If all content had been
7 deleted, we wouldn't have found any information on this
8 phone at all related to web history. So I was able to
9 discount that one quite quickly.

10 Q And I guess alluding to what you had just said, why is
11 it that you don't believe that either of those two methods
12 of user deletion occurred in this context?

13 MR. YANETTI: Objection. May we approach, please?

14 THE COURT: I'm sorry?

15 MR. YANETTI: I said, "Objection. May we approach,
16 please?"

17 THE COURT: Okay.

18 (Sidebar commences:

19 MR. YANETTI: Mr. Whiffin does not give an opinion in
20 his report or any discovery that's been provided to us that
21 he disbelieves that there was user deletion in this case.
22 His report says the opposite. We have no notice of his
23 opinion.

24 THE COURT: What does his report say? You said it says
25 the opposite --

1 MR. YANETTI: Right.

2 THE COURT: -- it says it was user deleted?

3 MR. YANETTI: No. What it says is that there were five
4 explanations for why this shows up as deleted. He
5 eliminate four of those options, and then the last option
6 is user deletion or something that he doesn't understand.
7 That's what is in his report. There's no conclusion in his
8 report that it was not user deletion. We have no notice of
9 that.

10 THE COURT: What do you say, Mr. Lally?

11 MR. LALLY: It's absolutely not true. I'm not sure if
12 it's in the physical report or if it's in some of the
13 supplementary materials that I've provided to counsel over
14 the last month or so. I believe it was Mr. Whiffin who
15 sent me additional documentation about his opinion that
16 he's about to testify to is absolutely contained within
17 those materials.

18 MR. YANETTI: There's no notice of it.

19 THE COURT: All right. Can we move on and then during
20 the break find where it is?

21 MR. LALLY: Sure, absolutely.

22 end of sidebar.)

23 MR. LALLY: May I have one moment, Your Honor?

24 THE COURT: Sure.

25 Q Mr. Whiffin, moving on from that for a moment.

1 MR. LALLY: May I approach the witness, Your Honor?

2 THE COURT: Yes.

3 A Thank you.

4 Q That document I've just handed you, Mr. Whiffin, do you
5 recognize that?

6 A I do, yes.

7 Q And what do you recognize that to be?

8 A It's a document that highlights both the search terms
9 that were found in mobile Safari dot P list and the method
10 of searching.

11 MR. LALLY: May I approach again, Your Honor?

12 THE COURT: Yes.

13 MR. LALLY: Commonwealth would seek to introduce as the
14 next exhibit.

15 MR. YANETTI: No objection.

16 THE COURT: Okay.

17 (Whereupon Exhibit No. 616, Chart, was marked as an
18 exhibit.)

19 MR. LALLY: May I return it to the witness, Your Honor?

20 THE COURT: Yes.

21 MR. LALLY: As well as may I publish it to the jury?

22 THE COURT: Okay.

23 Q And, Mr. Whiffin, do you recognize what's up on the
24 screen as the next exhibit?

25 A I do, yes.

1 Q We did view the term in there, I believe, called a P
2 list; is that correct?

3 A Correct.

4 Q Can you explain to the jury what you understand that
5 terms to mean and how it relates to what you're about to
6 talk about on the screen?

7 A Yeah, so a P list or a proxy list, is Apple's way of
8 storing serialized data. That essentially means a list of
9 data with names and values.

10 Q And so if you could again using that laser pointer,
11 direct the jury's attention to -- explain sort of what
12 we're looking and what you observed in this particular
13 slide or table?

14 A Yeah. So again, this is a table I created from the data
15 within the mobile Safari dot P list. The term shown down
16 the left is what the user would have typed in to the search
17 bar that's -- sorry, I just blinded somebody -- the search
18 bar in the bottom of the Safari browser window. The UTC
19 time is the time which is actually recorded within the P
20 list. It's recorded as a string, so just text as it's
21 presented on the screen there. And then I converted that
22 and subtracted five hours to bring it into local time
23 around Canton.

24 Q Now, aside from this, just for a moment, with regard to
25 -- showing you what's termed as a private browser mode?

1 A Yes.

2 Q And can you explain to the jury what that is and how it
3 relates to this?

4 A Yeah, so private browsing mode is a setting that you
5 can set on iOS devices or primarily most devices, that
6 prevents any of your browsing activity being recorded, so
7 that it won't save the searches, it won't save the
8 navigations. It protects everything so that it can't be
9 found later on.

10 Q And what if any relation did that have to what you --
11 your analysis of the extraction in this case?

12 A If these searches had been conducted while in private
13 browsing mode, these searches would not exist within this
14 file.

15 Q So is it your opinion that they were not conducted in
16 any kind of private browsing mode?

17 A Correct.

18 Q Now, are you also familiar with the term as far as
19 failure to load?

20 A Yes.

21 Q Can you explain that to the jury and how that applies
22 to this?

23 A Yes. So obviously, whenever you try to visit a web
24 page, there's a stream of information coming from the web
25 to the device, which then renders onto the screen. At the

1 completion of the load event, there's a function
2 effectively which runs and that records the visit to the
3 history database. If, for some reason, the page doesn't
4 load and it shows up with an unable to load message, so,
5 for example, you don't have an Internet connection at all,
6 that unable to load will be recorded. If, however, the
7 device stalls and it just sits kind of waiting to load,
8 nothing gets written to the history database. And if you
9 were to close the browsing window prior to the page
10 completing its load event, nothing will be written to
11 history.

12 Q Would that be written to somewhere else within the
13 phone as far as any other storage areas?

14 A Technically, the only place I found would be the
15 browser state.

16 Q Now, with regard to the P list files. Does the -- P
17 list files take all sort of history items or no?

18 A Primarily, it's used to save preferences. So you'd
19 have a lot of information in there, if it's using the light
20 mode or dark mode, or when you want tabs to auto clear,
21 that kind of information, but it also records several days'
22 history of searches. The actual number of days' searches,
23 I actually don't know.

24 Q And what if any relationship does that have with regard
25 to the search bar that's located on the bottom of this

1 table here?

2 A In order for the search item to be saved to the mobile
3 Safari P list, you need to actually type into this
4 particular search bar. If you were to just visit Google.com
5 and start typing into the Google search bar, it will not be
6 recorded within the mobile Safari dot P list.

7 Q And so what, if anything, were you able to determine
8 about those two searches with regards to what you observed
9 here?

10 A So these particular two searches were conducted at
11 6:23:51 and 6:24:18, respectively. They were searched using
12 the search bar that's built into Safari. The fact that
13 they didn't exist within history DB, and that there were no
14 deleted records from history.DB leads me to believe that
15 they never successfully loaded.

16 MR. LALLY: May I approach again, Your Honor?

17 THE COURT: Yes.

18 Q I'll hand you that and I'll take this. I handed you a
19 document, do you recognize that?

20 A I do, yes.

21 Q What do you recognize that to be?

22 A This was the additional -- the items from the
23 history.db I believe.

24 MR. LALLY: May I approach, Your Honor?

25 THE COURT: Yes.

1 MR. LALLY: Commonwealth would seek to introduce and
2 admit as the next exhibit.

3 MR. YANETTI: Objection.

4 THE COURT: Okay. Could you bring it with you?
5 (Sidebar commences:

6 THE COURT: What's the objection?

7 MR. YANETTI: My objection is that report does not
8 appear to be generated by any program. It says that the
9 list is not exhausted. It's created in anticipation of
10 trial, so it is not a proper business record.

11 THE COURT: I don't think he was saying it was a
12 business record. Are you saying it's a business record?

13 MR. LALLY: No, I'm saying this is contained on this
14 page in his report right there and as well as his table
15 that he uses that it's from the extractions of the phone.

16 MR. YANETTI: It's hearsay, Judge. Whether it's a
17 business record or based on whether I accept it, it's
18 hearsay.

19 THE COURT: What do you say about that, Mr. Lally?

20 MR. LALLY: It's from the extraction that he conducted.

21 THE COURT: And he used it to ...

22 MR. LALLY: He used it to, again, to formulate an
23 opinion or explain the items and materials that he observed
24 during the course of the extraction. It's no different
25 than any of the other exhibits that have just come in.

THE COURT: All right. I'm going to allow it in over your objection.
end of sidebar.)

THE COURT: Next exhibit, please.

(Whereupon Exhibit No. 617, List of Search Terms, was marked as an exhibit.)

THE COURT REPORTER: If you could just repeat what it is?

MR. LALLY: Sure. May I return to the witness, Your Honor?

THE COURT: Yes.

Q And I'm sorry, Mr. Whiffin, if you could just repeat exactly what that is in the next exhibit?

A Yes. Sorry, it's a comparison between the search terms found in the P list, so the mobile Safari P list and the search terms found within the history.db database.

Q So the items contained within this table are items that were contained within the extraction that you examined, correct?

A Correct.

MR. LALLY: And, Your Honor, with the Court's permission, if I could display that to the jury?

THE COURT: Yes. Yes.

Q Mr. Whiffin, if you could, again, using the laser pointer, just describe for the jury what we're looking at

1 in this table, and what, if anything, of significance
2 between sort of the two sources of information depicted
3 here?

4 A Okay. So the first list, the P list term, shows the
5 term within the mobile Safari dot P list excluding the two
6 that we've already mentioned, which are of note. And the
7 first time stamp column shows the time stamp according to
8 that P list. The history item shows the search term as
9 recorded in the history database, and then we have the time
10 stamp as per the history database. So the purpose of this
11 document was to show that we have a search for "Raining
12 Men" and a history item related to the Google search for
13 "Raining Men," and they show within a second of each other.

14 Again, the next one down Antoinette Okoh basketball and
15 the associated Google search. And again, the time stamps
16 are within a second. This list was nonexhaustive. There was
17 hundreds of examples within the history.db, but limited
18 examples within the mobile Safari P list.db

19 And as I mentioned, the two searches of interest, the
20 "how long ti die in cikd," and "hos long to die in the
21 cold," didn't exist within the history DB at all.

22 MR. LALLY: Ms. Gilman, you can take that down.

23 Q Now, sir, if I could ask you just a little bit now
24 about the browser state db. Again, can you explain to the
25 jury sort of what that is and how it -- if at all, it plays

1 a role in your analysis here?

2 A Yep. So initially, pre and including iOS 14, the
3 browser state database would show all tabs that you
4 currently had opened. So as soon as I go into my browser
5 and open a new tab, a record is created. It includes
6 information such as the time that I opened the tab, or the
7 time I last viewed the tab, the current URL which is being
8 displayed within that tab. It shows information whether
9 it's in private browsing mode or not. So in that kind of
10 case, in iOS 14 and below, we're able to see current
11 private browsing records and subsequently recover deleted
12 ones.

13 But in iOS 15, things changed. The record was no longer
14 written as soon as the tab was opened. It was only opened
15 when the tab was -- sorry -- the record was only created
16 when the tab was closed. That meant that our ability to
17 recover that kind of history was significantly lower. It
18 means that it no longer makes use of the private browsing
19 field because now private browsing records simply are never
20 written to that database. So now we can only really see a
21 list of all of the tabs that have been closed, not which
22 are currently open.

23 Q Now with review -- sorry -- with regard to the browser
24 state db, is there something referred to as a last view
25 time stamp?

1 A There is, yes. That's one of the fields within the
2 database.

3 Q And can you explain, specifically with relation to that
4 field, sort of what kind of information is kept there and
5 what it means?

6 A Yeah, so from my research based on this, that time
7 stamp relates to the time that the tab took focus. So
8 that's either when the user creates the brand new tab, when
9 they switch between tabs and bring a tab back into focus,
10 when they close a tab, which automatically brings one of
11 the background tabs into focus, or if Safari has been
12 completely closed and reopened, that essentially acts like
13 almost a new tab and the time stamp gets updated at that
14 point.

15 Q Now, can you explain how the earlier time stamp could
16 be associated from, say, tab is open, something is done,
17 tab is closed, tab is reopened, something else is done, how
18 that earlier time stamp could then be associated data-wise
19 with the subsequent search?

20 A I think I find --

21 Q Opening it.

22 A I think I followed that. Okay. So if, for example, at
23 12:00 p.m., I create a new tab, I can do a search for
24 whatever I want, and at that point, if I close the tab,
25 then the record that gets created will show that I opened

1 the tab at 12:00 p.m., and I did a search. Excuse me.

2 However, if I open the same tab at 12:00 p.m., do a
3 search, close it, like completely closed down Safari and
4 reopen Safari, that would actually -- that would also
5 update the same time stamp to show that I'd opened it up
6 again. What I meant to say at that point, is that if I
7 create a 12 o'clock tab, minimize Safari, I can leave it
8 for several hours, for several days, for several weeks.
9 The time difference is not really important. When I come
10 back to it and open up Safari again from a background
11 state, the time stamp is not updated, so it will still show
12 12:00 p.m. today, and it will show whatever my most recent
13 navigational event is. So I can search for something in
14 three weeks' time using the same tab I opened today, and
15 the time stamp will show today's time.

16 THE COURT: All right. I think this is a good place to
17 take our break.

18 MR. LALLY: Yes, Your Honor.

19 THE COURT: Mr. Whiffin, we'll, of course, ask you to
20 stay with us. Okay. As the jurors file out, you can file
21 out behind them, sir. Okay.

22 (Jury out.)

23 THE COURT: Could I see counsel regarding timing,
24 please.

25 (Sidebar commences:

1 THE COURT: So I'll give you time to find the discovery
2 that you sent --

3 MR. YANETTI: He already did, and we're ready to be
4 heard on it whenever the Court is ready.

5 THE COURT: Right now.

6 MR. YANETTI: Good. So on June 10, Mr. Lally sent the
7 document that he just handed to me in court. He said that
8 he was not going to use it, that he received it from Mr.
9 Whiffin so he was passing it along. We did not take that
10 into account because he specifically said he was not going
11 to use it. So there's that problem. But secondly, we've
12 already had an opening statement, we've already had the
13 bulk of the trial, and on June 10, one week ago today,
14 supposedly informed in this kind of obtuse way that the
15 expert is now updating or modifying his opinion? There's
16 the email right there. I can read it into the record if
17 the Court wants.

18 THE COURT: That's fine.

19 MR. YANETTI: It's short. "Counsel, please find -- "
20 Can you read it because I can't see?

21 MR. JACKSON: The date is June 10, 2024. The time is
22 6:29 p.m. (Static noise.)

23 THE COURT REPORTER: You need to move back.

24 MR. JACKSON: How about if I do this? Is that better?

25 "Counsel, please find the attached to us -- please find

1 attached two attachments that were sent to us from Mr. Ian
2 Whiffin. I do not plan on using these during his late
3 testimony given the late disclosure, but wanted to send
4 them to you ASAP so that you have them as he had sent them
5 to us. I will do and file a new NOD ASAP as well. Thanks,
6 Adam."

7 THE COURT: Okay.

8 MR. JACKSON: And two attachments.

9 THE COURT: Okay. Can you turn the phone off, please?

10 All right. What do you say, Mr. Lally?

11 MR. LALLY: Your Honor, if I could during the break
12 what I'll do is I'll check the report. I believe that it's
13 also contained within his initial report as well. Those
14 are what I had showed counsel there are two attachments.
15 One had to do with very highly technical data that frankly
16 I don't understand, and I'm not even going to bother asking
17 Mr. Whiffin to explain that. Secondly, I think it was more
18 what I showed to counsel was more notes that Mr. Whiffin
19 had written to himself as far as for explanatory purposes
20 from his report. So I believe that information is within
21 that initial report. If it's not, then I'll withdraw and I
22 can move on. But if it's -- I believe it is.

23 THE COURT: All right. Is this something you intend to
24 get into with your expert? Because if you open the door,
25 you can always call him back.

1 MR. YANETTI: No, I understand. His report is very
2 explicit about the possibilities for deletion.

3 THE COURT: Okay.

4 MR. YANETTI: I intend to ask him about his report
5 regarding what he reported. I don't intend to go beyond
6 that. I don't intend to ask him if he's done further
7 research since then. I don't intend to get into this at
8 all. I do not want to open the door. But we've been given
9 a report that we relied on in discovery in terms of our
10 preparation for this case and I should not be robbed of the
11 opportunity to explore that.

12 THE COURT: All right. So we'll deal with that with
13 your expert. See if you can find it.

14 MR. LALLY: Sure.

15 THE COURT: And we will go from there. How much -- I
16 just want to figure out time wise because I assume we were
17 going to take two days away from the jury trial. You'd
18 like to finish him today?

19 MR. LALLY: Please, yes.

20 THE COURT: How much longer do you have with him?

21 MR. LALLY: I'd say, including the demonstration, no
22 more than an hour.

23 THE COURT: Okay.

24 MR. YANETTI: I won't be long.

25 THE COURT: Okay. All right. Let's try and finish him

1 today then. We'll take a -- we'll come back at twenty
2 minutes of two.

3 end of sidebar.)

4 THE COURT: All right. So recess until 1:40 p.m.

5 (Court in recess at 1:07 p.m.)

6

7

8 (Court in session.)

9 (Defendant is present with counsel.)

10 (Jury in.)

11 THE COURT: Okay. Whenever you're ready, Mr. Lally.

12 MR. LALLY: Thank you. Your Honor, may I approach?

13 THE COURT: Yes.

14 Q (By Mr. Lally) Sir, showing you another document.

15 A Thank you.

16 Q Do you recognize that?

17 A I do, yes.

18 Q And what do you recognize that to be?

19 A This is the entire Google URL that was found on the
20 browser state at record. So broken down into each of its
21 important sections.

22 MR. LALLY: May I approach again, Your Honor?

23 THE COURT: Yes.

24 MR. LALLY: Commonwealth would seek to admit it as the
25 next exhibit.

1 THE COURT: Okay.

2 MR. YANETTI: Same objection as before at sidebar, Your
3 Honor.

4 THE COURT: Okay. There are a couple of different
5 objections. I need to see you at sidebar. I don't know
6 what you're talking about. There are two different ones,
7 Mr. Yanetti.

8 (Sidebar commences:

9 MR. YANETTI: Just to give you a bit --

10 THE COURT: I didn't know if it was notice, or now that
11 I see that document. I had no idea what it was.

12 MR. YANETTI: Oh, I understand.

13 THE COURT: So you say that same objection --

14 MR. YANETTI: I know. But you see what I'm saying.
15 You know, the objection is hearsay. I understand the
16 Court's ruling on that aspect, but I didn't want to not
17 object.

18 THE COURT: Okay. That's fine. Did you find -- give it
19 notice to -- did you give notice?

20 MR. LALLY: I think the bulk of what he would testify
21 about is contained within the report and the notes. I think
22 there's one minor piece that isn't so I didn't ask him
23 anything about that, but as far as his opinion as to
24 whether or not the data was user deleted, I think that's
25 pretty clear in his report.

1 MR. YANETTI: Well, it's not at all.

2 THE COURT: All right. So it's already in. I'm not
3 going to strike it. If this witness just lived down the
4 street, you could deal with it later, but let's try and get
5 his testimony in --

6 MR. YANETTI: Understood.

7 THE COURT: -- and I can hear you later on. I'm going
8 to have to look at the --

9 MR. YANETTI: I understand.

10 THE COURT: -- report and the notes and all of that.

11 MR. YANETTI: Thank you.

12 THE COURT: So it will stay as is.

13 end of sidebar.)

14 THE COURT: That will be the next exhibit.

15 (Whereupon Exhibit No. 618, Chart, was marked as an
16 exhibit.)

17 THE COURT: Thank you.

18 MR. LALLY: May I approach the witness, Your Honor?

19 THE COURT: Yes.

20 MR. LALLY: May I publish it for the jury?

21 THE COURT: Yes.

22 Q Now, Mr. Whiffin, what's up on the screen now, is that
23 what you have before you, Exhibit 618?

24 A It is, yes.

25 Q And if you could again with your laser pointer direct

1 the jury's attention to what are we looking at
2 in this exhibit?

3 A Okay. So the right -- sorry -- the left side of the
4 table is the entire URL that was recovered from the browser
5 state record. What I've done is broken it down into each of
6 its individual components and explained what each of those
7 components means. So the very first row is
8 Google.com/search. That just tells the browser that we're
9 going to the Google website and that we want to run a
10 search. The second part, the Q equals, is telling the
11 browser what the query term is. So the query term here is,
12 "Hos long to die in cold." The little plus symbols in
13 between is in place of a space because spaces can't be part
14 of a URL.

15 Next, we have the input encoding and the output
16 encoding. Just explains what kind of characters to use and
17 what language to use when you're accepting the search query
18 and giving it back to the user.

19 And finally, the important part is the and client
20 equals Safari. This is something that just tells Google
21 that this query is being done using the Safari client.
22 Again, if I was to use Safari and just visit the Google web
23 page and type that in, that type of searching, that part of
24 the string wouldn't be there. That's only there because I
25 used the Safari search bar as part of the Safari

1 application to do that search.

2 Q Thank you, sir.

3 MR. LALLY: Ms. Gilman, you can take that down.

4 Q Now, sir, with reference to that, what if any
5 relationship does that have to the information you were
6 discussing just prior to the break?

7 A Again, that confirms that this search was conducted via
8 the Safari bar search feature that's part of the Safari
9 browser application. The same one that caused the records
10 to be recorded in the P list.

11 MR. LALLY: Your Honor, may I approach the witness
12 again?

13 THE COURT: Yes.

14 Q Showing you another document. Do you recognize that,
15 sir?

16 A I do, yes.

17 Q And what do you recognize that as?

18 A This is the live records from the browser state.db
19 database.

20 MR. LALLY: May I approach, Your Honor?

21 THE COURT: Yes.

22 MR. LALLY: Commonwealth would seek to introduce it as
23 the next exhibit.

24 MR. YANETTI: No objection, Your Honor.

25 THE COURT: All right. Thank you.

1 (Whereupon Exhibit No. 619, Chart, was marked as an
2 exhibit.)

3 MR. LALLY: May I return this to the witness?

4 A Thank you.

5 MR. LALLY: May I publish that for the jury as well,
6 Your Honor?

7 THE COURT: Yes.

8 Q And, Mr. Whiffin, do you recognize what's up on the
9 screen now is what you have before you as Exhibit 619?

10 A I do, yes.

11 Q Now turning back to the browser DB database for this
12 particular device, with regard to the time stamp and the
13 last viewed time, what, if anything, did you observe in
14 reference to that depicted in this and could you direct the
15 jury's attention to

16 it?

17 A Yes. So this time stamp is the last viewed time
18 according to the database itself. It's already been offset
19 so that it's in local time. This particular table, we can
20 see there are records missing between records 4025 and
21 4031. We have -- sorry -- 4025 and 4031, we have 4026, 27,
22 28, 29, and 30 missing. And typically, the time stamps that
23 we do have here, some of them are separated by as little as
24 a second or two.

25 Q Now, with reference to the "Hos long to die in cold,"

1 that was record 4028; is that correct?

2 A That's correct.

3 Q And so based on records missing from this portion of
4 the form as far as that database, what, if anything, did
5 you endeavor to do with respect to ascertaining why?

6 A So first of all, the task was to try to recover the
7 deleted messages -- oh, sorry -- the deleted history
8 records from browser state. So first of all, it was reading
9 the deleted pages, essentially, to find the records that
10 had been deleted from this current version of the page.

11 MR. LALLY: May I approach again, Your Honor?

12 THE COURT: Yes.

13 Q I'm showing you another document and ask you if you
14 could review that.

15 A Yes.

16 Q And do you recognize that document, sir?

17 A I do, yes.

18 Q What do you recognize that to be?

19 A This is the same data source, so it's still browser
20 state dot DB, but now looking at it with the unique
21 recovered records.

22 Q And what is that, that last term that you use, what
23 does that mean? I'm sorry.

24 A So typically there can be lots of different versions of
25 a page within a WAL file. So you may have several page

1 ones, several page twos, and so on. Why I looked at is
2 doing is recovering the data whether records that I recover
3 are different from each other. So if I recover the same
4 record multiple times, I can ignore it, but if I recover
5 the same record with a slight change, then I would show it
6 in this view.

7 MR. LALLY: May I approach, Your Honor?

8 THE COURT: Yes.

9 MR. LALLY: Commonwealth would seek to introduce it as
10 the next exhibit.

11 MR. YANETTI: No objection.

12 THE COURT: Okay.

13 (Whereupon Exhibit No. 620, Chart, was marked as an
14 exhibit.)

15 MR. LALLY: Your Honor, with the Court's permission,
16 may I publish that to the jury?

17 THE COURT: Yes.

18 Q Again, Mr. Whiffin, if you could use the laser if you
19 find it helpful, direct the jury's attention to what are we
20 looking at here, and what if anything did you uncover
21 during this portion of your analysis?

22 A Yes. So again, the very first column on the left is the
23 unique identifying number. You'll notice that there are
24 some numbers here which are repeated. This is, as I said,
25 because the records are recovered from multiple versions of

1 the same page. There was actually 16 versions of this
2 record across 60 -- across 23 different versions of this
3 particular page. These three have some difference,
4 primarily it was the -- what's called the tab order field,
5 but that's the only difference that showed up across these
6 three "Hos long to die in the cold," records. All the rest
7 show the same URL, the same ID number at the beginning, or
8 tab ID number, and the same time stamp.

9 Worth noting, there is no title shown in this
10 particular record. Again, that speaks to the fact that
11 this page didn't successfully complete loading. Otherwise,
12 there would be a title of, "Google search. Hos long to die
13 in the cold," as you saw on some of the other examples
14 earlier.

15 Q Now, sir, with respect to the table up here, is there
16 any indication in regard to private browsing that you were
17 talking about before?

18 A No. In iOS 15, as I mentioned, if you are using private
19 browsing mode, there is no records recorded in this
20 database at all.

21 Q So the fact that that's not listed in this table, what,
22 if anything, does that tell you?

23 A Everything that was recorded in this database was
24 conducted not in private browsing mode.

25 Q Now, with respect to your work within your field, are

1 you familiar with the term called session?

2 A Yes.

3 Q And can you explain to the jury what you want
4 understand that term to mean and how it applies to this
5 specific instance?

6 A Essentially, the life of the particular tab. So when I
7 start a tab and I start to use navigation, I go to
8 different websites. All of my navigation events would be
9 considered part of the same browsing session, essentially.

10 Q Now, sir, if I could turn your attention to the
11 Knowledge C database for a moment. And again, if you
12 could, maybe I'm repeating just as far as -- can you
13 explain to the jury what you understand that term to mean
14 as far as what is the Knowledge C database in respect to
15 the other databases we talked about.

16 A Yeah. So far, the bulk of what we've discussed - the
17 history.db, the browser state DB, and mobile Safari dot P
18 list are all particular to the Safari application on iOS.
19 Knowledge C is much more global. It's much more ingrained
20 within iOS. Everything is essentially recorded in there on
21 iOS 15. So again, backlight activity, unlock activity,
22 application state activity, and web usage activity is all
23 recorded as part of Knowledge C.

24 MR. LALLY: May I approach again, Your Honor?

25 THE COURT: Yes.

1 Q Showing you another document. If you could review that
2 for a couple of minutes.

3 A (Witness complies.) Yes.

4 Q And do you recognize that document, sir?

5 A I do, yes.

6 Q What do you recognize that to be?

7 A This is a document I created based on the Knowledge C
8 web usage records.

9 MR. LALLY: May I approach, Your Honor?

10 THE COURT: Yes.

11 MR. LALLY: Commonwealth would seek to introduce and
12 admit as the next exhibit.

13 MR. YANETTI: No objection.

14 THE COURT: Thank you.

15 (Whereupon Exhibit No. 621, Chart, was marked as an
16 exhibit.)

17 MR. LALLY: And, Your Honor, with the Court's
18 permission, may we publish that to the jury?

19 THE COURT: Yes.

20 Q Sir, again, what's up on the screen, do you recognize
21 that as what's before you as the next exhibit?

22 A I do, yes.

23 Q And if you could again --

24 MR. LALLY: Ms. Gilman, if I could ask you to scroll
25 down to the green tabs. Thank you.

1 Q Now, if you could, sir, again using that laser pointer,
2 if you could direct the jury's -- well, first, can I you,
3 what is it that we're looking at in this exhibit?

4 A This is a particular what's called a stream within
5 Knowledge C. A stream is basically all like information
6 being grouped together. So in this particular case, the
7 stream is related to Safari, and it's telling us what web
8 page was visible on screen, what time it started, and what
9 time it finished.

10 Q Now, with respect to this particular tab, there are
11 portions that are highlighted in green and portions that
12 are highlighted in blue; is that correct?

13 A Correct.

14 Q Can you explain to the jury of what the portions
15 highlighted in green represent?

16 A I highlighted the sections in green due to their time
17 stamp. So typically, these items last between 2:27:37 a.m.,
18 and 2:27:53 a.m., so around the time of the Google search,
19 if you were to believe the browser state.

20 Q And with respect to the items that are highlighted in
21 blue, what if any -- what are those?

22 A The ones in blue are the actual Knowledge C records
23 that show when the "Hos long to die in the cold" and the
24 "How long ti die in the cikd," web pages were actually
25 visible on screen.

1 Q So from this, what, if anything, were you able to
2 ascertain as to the searches or the time associated with
3 the searches from your analysis here?

4 A At 2:27:40, the only websites that were visible on
5 screen were related to Ozone Basketball and Hockomock
6 Sports, and that the, "How long ti die in the cikd," first
7 appeared on screen at 6:23:56, and, "Hos long to die in
8 cold," first appeared on the screen at 10:33 a.m.

9 Q So those two searches from your review of this traction
10 in this device never appeared on the screen prior to 6:23
11 in the morning, correct?

12 A Correct.

13 Q Now, from all this, sir, what, if anything, were you
14 able to conclude with regard to these searches?

15 A So essentially, ignoring the browser state time stamp
16 is important because that is not a reliable time stamp to
17 show when that URL was visited. We have mobile Safari dot P
18 list record searches that show 6:23 and 6:24, and we show
19 the same searches with very similar time stamps within half
20 a second as showing up on screen in Knowledge C, for the
21 "how long ti die in cikd," and the, "hos long to die in the
22 cold," was actually several hours later, which took a
23 little bit more explaining, looking at knowledge C and when
24 the applications were opened up.

25 Q Now, with respect to your view of the extraction of the

1 device around these times, were you able to ascertain as to
2 what time this particular device connected to a WiFi
3 sometime after 2:00 a.m.?

4 A I actually didn't look at any WiFi connection
5 information.

6 Q And with respect to 2:27 in the morning, at 2:27 a.m.,
7 what were the websites that the device had visible, and
8 what were the websites device was connected to at that
9 time?

10 A So according to the Knowledge C records, which were
11 mostly also reflected within the history DB as well, it was
12 the Hockomock Sports, YouTube, Ozone Basketball, and that's
13 it for the main domains.

14 Q Now, with regard to the WiFi connection, is your memory
15 exhausted as it pertains to that?

16 A Yeah, I don't remember looking at WiFi history.

17 MR. LALLY: Your Honor, may I approach?

18 THE COURT: Yes.

19 Q I'm showing you a copy of your report.

20 A Thank you.

21 Q Review that and look up when you're finished.

22 A (Witness complies.) Okay.

23 Q And, sir, I'm sorry. In the interest of time, if
24 I could ask you just to look at the next page as well just
25 briefly?

1 A (Witness complies.) Okay.

2 Q Is your memory refreshed, sir?

3 A I do, yes.

4 MR. LALLY: May I approach to retrieve, Your Honor.

5 THE COURT: Yes.

6 Q So, Mr. Whiffin, from your review of the extraction
7 report, in regard to this device of Ms. McCabe's, about
8 what time was the connected to a WiFi network called
9 McCabe?

10 A I believe it was 0207. I didn't actually remember the
11 time stamp just then.

12 Q And with respect to the disconnection from that, do you
13 know when that was?

14 A I can't recall.

15 MR. LALLY: Your Honor, if I may approach?

16 THE COURT: Yes.

17 MR. LALLY: And for purposes of the time, Your Honor,
18 may the witness review the report?

19 THE COURT: Yes.

20 MR. LALLY: Thank you.

21 A (Witness complies.)

22 Q And, sir, if you can from looking at your report, if
23 you can, just indicate to the jury as far as the WiFi
24 connections with --

25 A The WiFi was connected at 0212 and disconnected at

1 0539. There was no further WiFi activity until 11:00 a.m.

2 Q Thanks.

3 MR. LALLY: May I approach just to retrieve, Your
4 Honor?

5 THE COURT: Yes.

6 Q Sir, are you familiar with something called a write
7 ahead log or a WAL file?

8 A I am, yes.

9 Q And if you could explain to the jury what your
10 understanding of that term is and how it applies in this
11 specific case?

12 A Yes. So a write ahead log is essentially a temporary
13 store for database pages. When I'm talking about database
14 pages, it's not something that the user ever sees. It's
15 part of the structure of SQLite databases. Just as
16 chapters in a book can span multiple pages, data in a
17 database can span multiple pages also, and it's not
18 necessarily in the expected order. It's up to the database
19 application to find those pages and order them correctly in
20 order to display the data to the user.

21 The WAL file, on the other hand, it still contains
22 pages, but they're organized in frames, essentially. And a
23 frame is the same as a page, but with additional
24 information at the top that identifies what page it is. So
25 I mentioned earlier that it's possible to have multiple

1 versions of the same page within the WAL file. That's
2 because every time I write a record to the database, a new
3 frame is created and the page is updated. So for example,
4 if I was to have a new database, create a record, a new
5 frame is created with page one, and it adds my record. As
6 soon as I add a second record to that database and a new
7 frame is created again, so I now have frame one and frame
8 two. Both of those frames would contain a version of page
9 one. The first frame would contain only record one. The
10 second frame would contain records one and two and so on.

11 Forensically, where it gets interesting is on the edit
12 or deletion of a record, because the same process is
13 applied. So now a new frame is created. The page number is
14 the same as previously, so we'd still have a page one, but
15 now only the records that I don't want to delete are copied
16 across. So I could end up in a situation where I have four
17 versions of page one, one has record one, one has records
18 one and two, one has records one, two and three, but the
19 most recent version of the page only has record one and
20 three, for example.

21 Now, a normal piece of database software will only look
22 for the most recent version of the page, so you would only
23 see records one and three. The forensic software can look
24 at all previous versions of the page as well, and that's
25 how we're able to recover record two in that instance. And

1 that's essentially how we were able to recover the browser
2 state record from WAL.

3 Q Now, sir, turning to that issue as far as deletion,
4 what, if anything -- let me ask you this first just before
5 we leave the WAL file. So with regard to the WAL file, what
6 if any relevance is there that certain data only exists
7 within the WAL file?

8 A So again, if I create a record that's in the WAL and
9 delete it before it gets committed, which means when it
10 gets merged into the main database, then it exists only in
11 the WAL. It could be that it's a brand new record that just
12 hasn't been written yet, or it could be one which was
13 deleted from the database prior to the commit occurring.

14 Q When you say commit, what exactly is -- what does that
15 mean?

16 A Commit's a process where, essentially, the database
17 looks at all of the most recent versions of each page in
18 the WAL file, copies them out from WAL and puts into the
19 main database, and then deletes the WAL file altogether. So
20 at that point, we lose the ability to recover data from WAL
21 because the WAL doesn't exist, but we have all the most
22 recent versions of the page.

23 Q Now, sir, turning to the concept of the topic of
24 deletion of data, what, if anything, did you find with
25 regard to deletion of data with respect to this search as

1 applied to the P list that you did stuff before?

2 A Recovering data that's been deleted from the P list is
3 not really possible. So all we can say is if this record
4 exists within the P list, it hasn't been deleted.

5 Q Now, same question with regard to issues of deleted
6 data with regard to the history DB.

7 A There was no records of any -- so there's no evidence
8 of any records being deleted from history.db since early
9 January. I think it was like the 3rd of January up to
10 February 2.

11 Q And how are you able to tell that with regard to the
12 history.db?

13 A Again, every record is given a unique number, and
14 there'd be a gap in that numbering system if a file or if a
15 record had been deleted. The fact that there was no gaps
16 indicates that nothing had been deleted.

17 Q And with regard to deletion, what, if anything, were
18 you able ascertain with regard to deletion versus web usage
19 and the Knowledge C database?

20 A Knowledge C contains such a large amount of different
21 type of data that's always being added and deleted for
22 various reasons, none at the discretion of the user. It's
23 a completely system driven event to delete information from
24 Knowledge C. So we can't say what was deleted from
25 Knowledge C, but we can see that during the times of Safari

1 usage, records exist within Knowledge C that indicate, or
2 certainly appear to indicate, that nothing was deleted.

3 Q What, if anything, were you able to find with regard to
4 deletion in respect to the browser state DB database?

5 A Browser state did have numerous records that had been
6 deleted. Some we were able to recover. Three records from
7 browser state all had a time stamp, very similar to 22740.
8 These were three records that had been deleted at some
9 point.

10 Q What are some of the options for deleting data from
11 that particular -- from the browser state DB?

12 A So the first most prominent option is to delete
13 absolutely everything from the device or delete all history
14 from the device, which, as I mentioned earlier, we know
15 that didn't happen because we still have other records. So
16 the only other real option is to delete selectively. That
17 could mean delete one at a time, and it could mean delete
18 either the full day, the last two days, or last hour, but
19 in all of those cases, the record must exist in history.db
20 in order to be deleted from browser state. The fact that
21 this record, the hos long and the how long ti die in cikd,
22 don't exist within the history database would mean that the
23 user would never have the option to selectively delete that
24 record.

25 MR. LALLY: May I approach, Your Honor?

1 THE COURT: Yes.

2 Q Showing you another document, sir.

3 A Thank you.

4 Q If you could look at that and look up when you're
5 finished.

6 A (Witness complies.) Yes.

7 Q Do you recognize that, sir?

8 A I do, yes.

9 Q What do you recognize that to be?

10 A So this is a list of the browser state DB records
11 showing a red line where a record or more have been
12 deleted.

13 Q And, again, the term deleted as far as it applies to
14 this particular area of the database, what exactly does
15 that mean again?

16 A It means the record has been marked as deleted. If you
17 were to read this database in a regular database
18 application, you would not see it. But it doesn't
19 necessarily mean that we can't recover it.

20 MR. LALLY: May I approach again, Your Honor?

21 THE COURT: Yes.

22 MR. LALLY: Commonwealth would seek to introduce and
23 admit as the next exhibit.

24 THE COURT: The exhibit.

25 MR. YANETTI: I have no objection to the exhibit.

1 THE COURT: That is the question.

2 (Whereupon Exhibit No. 622, Chart, was marked as an
3 exhibit.)

4 MR. LALLY: And, Your Honor, with the Court's
5 permission, may we publish Exhibit 622 to the jury?

6 THE COURT: Yes.

7 Q Again, sir, what's up on the screen is that what you
8 have before you as Exhibit 622?

9 A It is, yes.

10 Q And if you could please using the laser pointer direct
11 the jury's attention to what, if anything, of significance
12 you observed on this.

13 A So again, we can use the number down the left side,
14 which will identify the unique identifier given to each of
15 these records. We can see that the red line between the
16 first two records indicates that records between three-
17 nine-eight-six and three-nine-nine-three, have been
18 deleted. We can see that record 4,001 is deleted. Records
19 between 4,004 and 4,019 have been deleted. Record 4020 was
20 deleted, and then finally, records between 4025 and 4031
21 had been deleted also.

22 Q Now, sir, as far as records 4024 and 4025, what, if
23 anything, were you able to ascertain as far as the dates
24 and times associated with those?

25 A Yeah. So these particular records show up at 22731 and

1 22733, respectively, and this matched records within
2 Knowledge C that showed that at this particular time when
3 the tab took focus, that particular website was also shown
4 visible to the user in Safari.

5 Q Now, as far as the date and time for 4024 and 4025,
6 what, if anything, did you observe with respect to the date
7 and time for 4026, and what can you tell about that?

8 A So 4026 was approximately a second or two after the
9 record here 22733. I believe it was a 22735. And then
10 again, there was another record 4027, which, again, was
11 another two or three seconds after that time. So within a
12 nine second period between 22731 and 22740, there were four
13 records -- sorry -- five records within browser state DB
14 that had a time stamp within that nine seconds, all with
15 completely different types of website ranging from PayPal,
16 banking, YouTube, and the "Hos long to die in the cold."

17 Q Now, sir, with respect to -- are you familiar with a
18 term called spontaneous deletion?

19 A I believe so.

20 Q And can you explain to the jury what that is?

21 A It's not a term I would use, but essentially, a cleanup
22 operation would occur on the device where it would look for
23 orphaned records, records that are old enough to not be
24 required anymore, and they would just be deleted by the
25 system without any direction from the user.

1 Q Now, during the testing that occurred, your testing,
2 which occurred with respect to this device, what, if
3 anything, did you observe with regard to spontaneous
4 deletion?

5 A I wasn't able to replicate the spontaneous deletion. I
6 was able to replicate completely orphaned records, so a
7 record that existed in browser state without a
8 corresponding record in history.db, and it meant that there
9 was no way for me to delete that record manually without
10 deleting everything from the device regarding history.

11 MR. LALLY: May I approach, Your Honor?

12 THE COURT: Yes.

13 MR. YANETTI: May we approach, please?

14 THE COURT: Okay. Could you turn the lights on,
15 please, Tony. Thank you.

16 (Sidebar commences:

17 MR. YANETTI: So in this case, Your Honor, my objection
18 is not to the records themselves, which appear to be
19 computer-generated, but the hearsay that is labeled --

20 THE COURT: Okay.

21 MR. YANETTI: -- at the top of each page.

22 THE COURT: All these pages like that?

23 MR. YANETTI: Yes.

24 THE COURT: All right.

25 MR. YANETTI: I mean, there could be testimony about

1 that, but that's hearsay.

2 THE COURT: They'll need to be -- do you want to
3 respond?

4 MR. YANETTI: No. I mean --

5 THE COURT: So they'll need to be redacted before they
6 actually go to the jury. If Ms. Gilman can show them
7 without this, if she can just focus on the paragraph or the
8 chart and expand that without the hearsay, okay? They'll
9 come in.

10 MR. LALLY: Sure. Thank you.

11 MR. YANETTI: Thank you.

12 THE COURT: If you want to just take a marker right now
13 and do it, that's fine.

14 MR. YANETTI: That's fine.

15 end of sidebar.)

16 THE COURT: All right. So you're introducing that
17 those four pages or whatever it is, Mr. Lally?

18 MR. LALLY: Yes, Your Honor.

19 THE COURT: As one exhibit.

20 MR. LALLY: As the next four exhibits.

21 THE COURT: Okay. All right. So that will be -- those
22 will be admitted.

23 THE COURT: Were you going to publish those? Because
24 you can go ahead and publish them while this is --

25 MR. LALLY: I don't think that's ...

1 May I have just one moment, Your Honor?

2 THE COURT: Sure.

3 MR. LALLY: Your Honor, if I can take them just one by
4 one, I think that might be.

5 THE COURT: Okay.

6 Q Sir, I'm showing you a document. Do you recognize
7 that?

8 A I do, yes.

9 Q What do you recognize that to be?

10 A This is a report from my Artex tool showing the history
11 database at 213934 on the 27th of January, and 225509 on
12 the 27th of January.

13 MR. LALLY: May I approach again, Your Honor?

14 THE COURT: Yes.

15 MR. LALLY: Commonwealth would seek to introduce it as
16 the next exhibit.

17 THE COURT: All right. So all four are in. Okay. So
18 we don't need to --

19 MR. LALLY: They have not been marked.

20 (Whereupon Exhibit No. 623, Chart, was marked as an
21 exhibit.)

22 MR. LALLY: Can I have one moment, Your Honor? And,
23 Your Honor, with the Court's permission, if we could
24 publish that to the jury?

25 THE COURT: Yes.

1 Q Now, sir, with regard to this, we're looking at record
2 number 4026; is that correct?

3 A Yes, I believe we are.

4 Q And again, if you could direct the jurors' attention to
5 what exactly are we looking at in this exhibit with regard
6 to record 4026.

7 A Yes, so in the right column we see the source of the
8 information. So history.db is the database. History
9 underscore visits would be the table, and then the unique
10 identifying number of 31407 and 31408, we see that the
11 start time or the time that that particular website was
12 navigated to, according to history.db, was, as I say, both
13 on the 27th of January, one at 2139 and 34 seconds local
14 time, and one at 225509 local time. Both of these websites
15 are related to Hockomock Sports. We have the URL at the
16 top, followed by the title of the page, followed by a visit
17 count that tells us how many times that page has been
18 visited before.

19 MR. LALLY: I'm sorry. One moment, Your Honor.

20 THE COURT: Yes.

21 Q That next document, do you recognize that, sir?

22 A I do, yes.

23 Q What do you recognize that to be?

24 A This is the same kind of report. This is related to the
25 YouTube record that was part of the browser state database

1 related to "It's Raining Men" on YouTube.

2 Q Is that the record number 4027; is that correct?

3 A It is, yes.

4 MR. LALLY: Your Honor, may I approach again?

5 THE COURT: Yes.

6 MR. LALLY: I'd ask that that be marked as the next
7 exhibit.

8 THE COURT: Okay.

9 (Whereupon Exhibit No. 624, Chart, was marked as an
10 exhibit.)

11 MR. LALLY: Your Honor, very briefly, may I publish to
12 the jury as well?

13 THE COURT: Yes.

14 Q And, sir, what's up on the screen now, is that what you
15 have before you as the next exhibit?

16 A It is, yes.

17 Q And again, if you could, using the laser pointer, just
18 direct the jury's attention to what -- what, if anything,
19 of significance you observed in this record of 4027.

20 A Yes. So again, we have -- we have five records related
21 to the YouTube video "It's Raining Men" starting at record
22 31398, 31399, 31400, 31401,
23 and 31402. These were all accessed on the afternoon of the
24 27th of January, 2022.

25 MR. LALLY: May I approach again, Your Honor?

1 THE COURT: Yes.

2 Q Showing you another document. Do you recognize that?

3 A I do.

4 Q And what do you recognize that to be?

5 A This is some -- the same again, related to record 4029.
6 It shows that a website was visited on the 28th of January,
7 2021.

8 MR. LALLY: And, Your Honor, I ask that this be marked
9 as the next exhibit.

10 THE COURT: Okay.

11 (Whereupon Exhibit No. 625, Chart, was marked as an
12 exhibit.)

13 MR. LALLY: And, Your Honor, with the Court's
14 permission, may I publish that briefly to the jury as well?

15 THE COURT: Yes.

16 Q And, sir, what's up on the screen is that what you have
17 before you as the next exhibit in regards to 4029?

18 A It is, yes.

19 Q And again, if you could explain to the jury what we're
20 looking at?

21 A Yes. So this URL cantonma.org relates to the URL that
22 was provided in record 4029 of the browser state database.
23 It shows that this web page was accessed at 1:00 p.m. and
24 17 seconds -- sorry -- 17 minutes and 0 seconds and 1:00 pm
25 17 minutes and 8 seconds on the 28th of January, 2022.

1 MR. LALLY: May I approach again, Your Honor?

2 THE COURT: Yes.

3 Q Handing you another document, sir, do you recognize
4 that?

5 A I do.

6 Q And what do you recognize that to be?

7 A Again, the same kind of report. Again, this time for
8 record 4030 from browser state, and it shows access to
9 Ozone Basketball.

10 Q And with regard to that report, as far as the same kind
11 of report that's from your tool, the Artex tool; is that
12 correct?

13 A Correct.

14 Q And that Artex tool, is that a widely available tool
15 used within the field of forensic investigators?

16 A Yeah, it's something, as I said, I've worked on for
17 around five years. I've given it away free to the digital
18 forensics community for five years. There's approximately
19 600 users globally, and it's taught as part of the SANS
20 digital forensics training courses.

21 MR. LALLY: May I approach again just to retrieve, Your
22 Honor?

23 THE COURT: Yes.

24 MR. LALLY: Commonwealth would ask that this be marked
25 as the next exhibit.

1 THE COURT: Yes.

2 (Whereupon Exhibit No. 626, Report, was marked as an
3 exhibit.)

4 THE COURT: Thank you.

5 MR. LALLY: May I publish that for the jury, Your
6 Honor?

7 THE COURT: Yes.

8 Q With regards to this exhibit up on the screen record
9 4030, again could you just draw the jurors' attention or
10 direct the jurors' attention to what, if anything, of
11 significance you observed on this exhibit.

12 A Yes, so again, we have records from the history
13 database related to Ozone Basketball, and it shows that
14 this website was accessed at 11:00 a.m. and 26 minutes on
15 the 25th of January, 2022.

16 MR. LALLY: May I approach, Your Honor?

17 THE COURT: Yes.

18 Q Now with respect to sort of the totality of your
19 analysis, Mr. Whiffin, what if any conclusions did you come
20 to as to the timing of the two searches in question with
21 relation to what you observed in your analysis and testing
22 of this device?

23 A So in conclusion, I determined that the tab that was
24 used was focused at 22740. So the tab was opened at that
25 time, at which point it was being used to show Ozone

1 Basketball and Hockomock Sports websites. The 623, that
2 time stamp, is when the search was first conducted. It
3 never loaded the page. Otherwise, there'd be a record in
4 the history database. While that page was still loading a
5 secondary search was conducted for "hos long to die in the
6 cold." Again, that page never loaded either, although these
7 both did show up in the Knowledge C database to show that
8 the browser was trying to display these pages. Safari was
9 closed prior to the "hos long to die in the cold" record
10 being shown on screen at all. But when it was reopened at
11 1033 in regards to whatever other Safari activity was to be
12 conducted, it appeared on screen. So we have a 1033 record
13 where "hos long to die in the cold" was shown on screen,
14 even though the page never successfully loaded.

15 Q And with respect to your analysis and your testing
16 here, what if any opinion do you have as to whether or not
17 any of the data marked as deleted was actually user deleted
18 or user -- the user actually actively went through the
19 process of deleting it?

20 A Yeah. So again, we know that she didn't -- we know
21 that nobody deleted the entire history. So that leaves the
22 only option to be selectively deleting records. The fact
23 that there are no missing records in history DB shows that
24 it's impossible that that record could have been deleted by
25 the user. It would have just been orphaned in the database,

1 and I believe would have deleted itself at some stage
2 whenever a particular cleanup function ran. Although as I
3 said earlier, I haven't been able to replicate that.

4 I was able to continue to read the various versions of
5 the page that contained "hos long to die in the cold"
6 browser state record, and found that it existed at the same
7 time as another record that was created at least two days
8 later. Therefore, I can determine that that particular
9 record was not deleted until at the earliest 10:00 p.m. on
10 the 31st of January, and that it's not possible that the
11 user could have created or caused that deletion to occur.

12 Q Now, over the course of your analysis and testing, a
13 review of the extraction in this case, did you have
14 occasion to review an affidavit of a Mr. Richard Green?

15 A I did, yes.

16 Q And what if any opinions or conclusions do you have as
17 to that affidavit?

18 A I had issues with several of the statements being made
19 as part of the affidavit.

20 Q And what issues were those?

21 A Namely, it specified that Cellebrite report identified
22 that the search was conducted at 22740. And as I've
23 explained, I believe the tab took focus at 22740, not when
24 the search occurred. The report mentioned that Cellebrite
25 report identified it was deleted by the user. We don't do

1 that. We'll tell you that a record is deleted, but we don't
2 specify how the record was deleted. That's something for
3 the examiner to determine.

4 I forget. Oh, and then there was a mention of the
5 purpose of the browser state database. The explanation
6 given was correct for iOS 14 and below, but not for 15 and
7 above, which is relevant in this case.

8 Q Now, you mentioned this issue as far as coming up,
9 obviously, in this case and some other instances of phone
10 calls or inquiries that you received from Austria and other
11 places. What, if anything, has -- have you or your
12 company, Cellebrite, done with regard to rectifying this
13 issue?

14 MR. YANETTI: Objection.

15 THE COURT: I'll allow it.

16 A We recognize that this time stamp could be misleading.
17 Regardless of how we label that time stamp, the very fact
18 that a time stamp is there, we feel would be, well,
19 potentially misrepresented. So the decision was taken to
20 remove the time stamp altogether from that information. So
21 now we show the webpage was visited, but we don't attribute
22 a time to that purely because it could be wildly
23 inaccurate.

24 MR. LALLY: Your Honor, this may be the appropriate
25 time for the instruction.

1 THE COURT: Okay. All right. So, jurors, we're about
2 to see a demonstration by Mr. Whiffin. Simply, it's simply
3 a demonstration to help you to understand the evidence that
4 you've heard. It's not evidence from this case, but it
5 helps you understand the evidence in this case. You must
6 decide this case based solely on a fair consideration of
7 the evidence and nothing but the evidence. But this is a
8 demonstration to help you understand that evidence.

9 MR. YANETTI: Your Honor, our rights are preserved,
10 correct?

11 THE COURT: Yes.

12 MR. YANETTI: Thank you.

13 Q And so to that point, Mr. Whiffin, were you able to
14 prepare a demonstration in regard to what you've been
15 discussing through the course of your testimony?

16 A I was, yes.

17 Q And that demonstration doesn't specifically reflect on
18 the searches or the extraction report that you looked at in
19 this case, correct?

20 A Correct.

21 Q But as far as the overall issues that you've been
22 discussing in your testimony, correct?

23 A That's correct.

24 MR. LALLY: And with the Court's permission, may the
25 witness now illustrate that to the jury?

1 THE COURT: Yes.

2 A (Demonstration displayed.) Okay. So first of all on
3 the left there, you can see a screen of an iPhone, and that
4 is a phone I have in front of me live. It's just
5 demonstrating what I can see on the phone.

6 This is my Artex tool, and the feature which I
7 continuously use this tool for, which is not available
8 really, in any other vendor tools, is the ability to create
9 a live connection between my computer and the phone. The
10 live connection is what I've just started here, and what's
11 going to happen is all of the files and folders that exist
12 on the phone will be mapped to my computer so that I can
13 navigate it. I can look around and I can take a look at
14 live, near enough live records on the device. Prior to the
15 availability of this tool, I would have to test the theory
16 on a phone, do a -- do an extraction, and then pass the
17 extraction which could take anywhere between 20 minutes and
18 several hours.

19 The reason that I'm using this tool today is because I
20 can do those same tests within ten or twenty seconds,
21 typically. So I just need to wait for this section to do.
22 So it's already mapped out all the files and folders. It's
23 now asking for a few important pieces of information, which
24 it will then populate on the screen, so information such as
25 the device, serial number, et cetera.

1 What we're interested in, though, is the browser state
2 record. So I can go to the browser state database and take
3 a look at that and open that up. You can see that at this
4 moment in time, I have no records in the database at all.
5 If I go back into the live view of the phone, you can see I
6 have Safari open from last night, so it's been sat in the
7 background overnight and not doing anything. But at ten
8 past eight last night, I performed this search in a brand
9 new window. So start at Safari, opened up a new tab,
10 immediately searched for new tab at 2010 on the 16th of
11 June.

12 If I now search for the time right now, 1442, what I
13 can do is go back to my Artex tool and press this reload
14 button. That's going to delete the database from my
15 computer only, a copy of the most recent copy of the
16 database, and WAL file from my phone back to my computer
17 where it shows me I still have no records. That's expected
18 behavior because at the moment I've not closed the tab. So
19 if this again was iOS 14, there would be a record there to
20 say what tab I had open. But iOS 15 doesn't work that way.

21 I now go back to my tabs and actually just close this
22 window. I can go back into Artex and hit reload again, and
23 we now see we have some -- some records. I can look at this
24 particular record, and you'll see the title is 1442 Google
25 search. You'll see the Google search record here. So I just

1 need to change the time zone as well to eastern time. So
2 you see it's the most recent search which I conducted, the
3 1442 search. The last viewed time, though, still shows as
4 8:10 p.m., last night, because that's the time the tab was
5 focused, not the time that the search was conducted.

6 MR. LALLY: Thank you, sir. If I may have a moment,
7 Your Honor?

8 THE COURT: Yes.

9 MR. LALLY: Thank you, sir. I have no further
10 questions, Your Honor.

11 THE COURT: Okay. Mr. Yannetti.

12 MR. YANETTI: Thank you, Your Honor.

13 **CROSS-EXAMINATION**

14 **BY MR. YANETTI:**

15 Q Good afternoon, Mr. Whiffin.

16 A Good afternoon.

17 Q Sir, you had spoken a little bit about what was your
18 assignment here in terms of the data that was sent to you,
19 and I believe that you testified regarding that 2:27 a.m.
20 or 227 and 40 a.m. time stamp that it didn't make sense to
21 the investigators, correct?

22 A Correct.

23 Q Were you told that one of the investigators was Trooper
24 Michael Proctor?

25 A I don't recall any names being mentioned. The ticket

1 came to me or the request came to me via another Cellebrite
2 employee who had been asked about this case and asked
3 whether we could offer any help.

4 Q Okay. Thank you. You would agree with me that when
5 you're making or doing a simulation, you want it to be as
6 close to an apples to apples comparison as you can get?

7 A As best possible, yes.

8 Q And to get truly accurate research results, you want to
9 eliminate as many variables as you can, correct?

10 A Correct.

11 Q You wouldn't, for instance, want to use an android
12 operating system to try to replicate the activity from
13 Jennifer McCabe's Apple iPhone, correct?

14 A Correct.

15 Q What version of iOS did you use for your testing of
16 Jennifer McCabe's data?

17 A So this test has been undertaken on various different
18 versions of iOS from iOS 12, 13, 14, 15, 16, 17, and most
19 recently, on the beta version of 18 last week. This
20 particular demonstration was on 15.8.2.

21 Q Okay. And you're aware that -- you said 15.8.2,
22 correct?

23 A Correct. I've also tested on 15.7.

24 Q Oh, fair enough. You're aware, however, that Ms. McCabe
25 was using iOS version 15.2.1, correct?

1 A Correct.

2 Q And you would agree that the way that an artifact is
3 stored would depend on the iOS version that you use,
4 correct?

5 A Correct.

6 Q And your simulation did not use the iOS version that
7 Ms. McCabe was running on her iPhone, correct?

8 A Correct. I used the closest version I could find.

9 Q So I'd like to ask you some questions about the
10 characteristics of browser state.db dash WAL in record
11 number 4028.

12 A Okay.

13 Q That record number I believe you testified was found to
14 be deleted, correct?

15 A Correct.

16 Q But you were able to recover the date and time
17 associated with it, correct?

18 A The date and time of the last viewed?

19 Q Of that?

20 A Yes.

21 Q And what was that date and time?

22 A 2:27 and 40 seconds a.m.

23 Q You were also able to recover the content of that
24 particular Google search itself?

25 A I was able to recover the URL for it, yes.

1 Q Okay. And what was that Google search?

2 A "Hos long to die in the cold."

3 Q And it's true, however, that the session history could
4 not be recovered, correct?

5 A That's correct.

6 Q Now, given those characteristics that you've just
7 discussed, did your testing result in a WAL file record, W-
8 A-L, file record that matched the characteristics of 4028?
9 In other words, deleted with session history not
10 recoverable.

11 A The issue with the session history, I was able to
12 recover only the first page of session history. What
13 happens is, when there's a large amount of data that's
14 split over multiple pages, if it's a live record, all those
15 pages point to each other so that you can chain it together
16 and get one large amount of information. Once they've been
17 deleted, some of those pages can be overwritten, and
18 therefore the pointers don't make sense anymore. So the
19 amount of information in this session was way larger than
20 one page, and I wasn't able to recover anything further.

21 Q Okay. And you'd agree that the simulation was done
22 using a different operating system, correct?

23 A Correct.

24 Q Were you able to recreate the other deletions that
25 appeared before and after that record 4028?

1 A Which deletions, sorry.

2 Q Well, you had testified I believe there was an exhibit
3 that was introduced that showed that there were multiple
4 deletions both before and after, correct?

5 A Correct.

6 Q Were you able to recreate those deletions?

7 A When I manually deleted records from the history, then
8 the records also were deleted from the browser state.

9 Q Now, I believe that you testified, and if you didn't, I
10 believe it's in your report, that there are essentially
11 five mechanisms for record deletions in the browser state
12 database, correct?

13 A Correct.

14 Q You ruled out four of them pretty quickly, correct?

15 A Correct.

16 Q And I believe you've testified to that today, correct?

17 A Correct.

18 Q The only remaining option was selective deletion by the
19 user, or there's some internal mechanism for record
20 deletion that is not fully understood, correct? A Correct.

21 Q And you know of, as you've testified today, you know of
22 no internal mechanism for record deletion that's not fully
23 understood, correct?

24 A I've not been able to replicate that function, no.

25 Q All right. If there is no internal mechanism for

1 record deletion that's not fully understood, that would
2 leave selective deletion by the user, correct?

3 A Not in this case, no.

4 Q All right. Well, selective deletion, you would agree,
5 means that a user selects what to delete, correct?

6 A Correct.

7 Q And regarding the user, the term user, what is this?
8 Who is it?

9 A Whoever's using the phone at the time.

10 Q Okay. So it's actually somebody who is using the
11 actual iPhone itself, correct?

12 A Correct.

13 Q Not necessarily a computer expert, correct?

14 A Correct.

15 Q Would you agree with me that somebody who had access to
16 the data before it was extracted and sent to you could have
17 made selective deletions of the data?

18 MR. LALLY: Objection.

19 THE COURT: I'll allow that.

20 Q No, I don't.

21 Q Are you aware of an app called MySQL?

22 A Yes.

23 Q What is MySQL?

24 A MySQL is just a method for viewing SQLite databases.

25 Q All right. If someone had access to the raw data,

1 again before it was sent to you, and used that app, it
2 could make selective deletions of the data, couldn't
3 they?

4 A I assume you're talking about opening the extraction,
5 taking out the particular file and editing it?

6 Q Sorry. I interrupted you. You're right. Your Honor,
7 I apologize. And I apologize to you. If you could restate
8 your question -- or answer or give me your full answer.

9 A Okay. So it would be possible with the extraction to
10 take out particular databases, alter them, and put them
11 back into the extraction. But there's something called a
12 hash mechanism that we have in place that would -- it
13 essentially hashes the original data, and then it can be
14 hashed again at a later date. It results in a long string
15 of characters, and if there's any changes to the original
16 data, then we'd see that it's been modified.

17 Q Would you agree with me that someone with access to
18 that data and appropriate application or program could also
19 delete and renumber history.db and knowledge.cso so that it
20 would appear as though there was no break in the numbering,
21 so that it would also appear that nothing was deleted?

22 A It's potentially possible, but would require a large
23 amount of knowledge and skill to do in a way that can't be
24 detected.

25 MR. YANETTI: Thank you very much, sir.

1 THE COURT: Mr. Lally.

2 **REDIRECT EXAMINATION**

3 **BY MR. LALLY:**

4 Q Any discrepancy between the iOS version in Ms. McCabe's
5 phone and the iOS version in the demonstration that you
6 did, what, if any, impact does that have on what you showed
7 this jury?

8 A So in this particular case, every iOS version I tested,
9 as I mentioned, from 12, 13, 14, 15, 16, 17, 18, the time
10 stamp is always referring to the time that the tab took
11 focus. So even though there are some differences with when
12 the record's created, the meaning behind that time stamp
13 has been consistent.

14 Q Now, what you were asking about selective -- what you
15 were asked about in regard to selective deletion, you
16 indicated that there's no evidence of that in this case; is
17 that correct?

18 A Correct. Selective deletion would require that the
19 record existed in the history database in order to be
20 selected to be deleted. The fact that there's no missing
21 records indicates it was never written into that database,
22 and therefore, could not have been selectively deleted.

23 Q Now, the hash mechanism that you testified as far as
24 detecting whether or not someone had surreptitiously gone
25 in and deleted things, do you see any evidence of that in

1 your view of the extraction of Ms. McCabe's phone?

2 A I didn't have access to the hash information to see
3 whether any changes had been made. That's something that
4 the original examiner would have had access to. From my
5 point of view, there was nothing in there that would
6 indicate that tampering had occurred. The time stamps all
7 made sense for the files. The historical pages all made
8 sense. It's probably possible, but it would take a large
9 amount of skill to do.

10 Q Now, with regard to your analysis and your testing in
11 this case, again, what is your opinion or conclusion as for
12 when these two Google searches were conducted?

13 A I'm of no doubt that the only time those two searches
14 were conducted was at 6:23 and 6:24 on the morning of the
15 29th.

16 MR. LALLY: Thank you, sir. Nothing further, Your
17 Honor.

18 **RECROSS-EXAMINATION**

19 **BY MR. YANNETTI:**

20 Q Prior to today, have you ever heard of spontaneous
21 deletion?

22 A It's not a term I'm familiar with.

23 MR. YANETTI: Thank you.

24 THE COURT: All right, sir. You are all set. You may
25 step down.

1 THE WITNESS: Thank you.

2 THE COURT: Do you need a couple of minutes to get
3 yourself down?

4 THE WITNESS: I'll be quite fast. Thank you. Fast.
5 Thank you.

6 (End of requested testimony.)

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C E R T I F I C A T I O N

I, CHRISTINE D. BLANKENSHIP, NOTARY PUBLIC, DO HEREBY
CERTIFY THAT THE FOREGOING IS A TRUE AND ACCURATE TRANSCRIPT
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TO THE ACTION IN WHICH THIS HEARING WAS TAKEN, AND FURTHER THAT
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Christine D. Blankenship, September 30, 2024

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